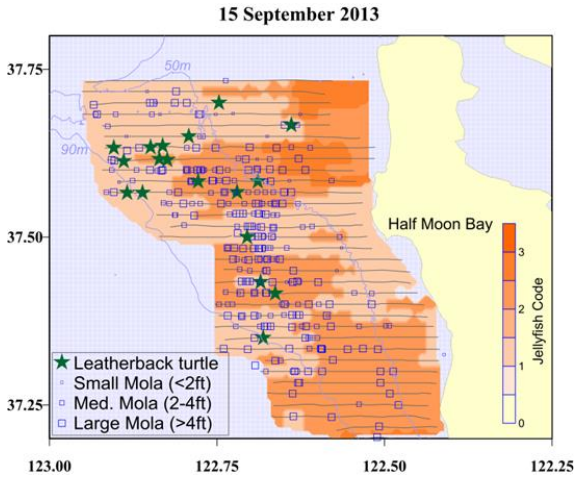
MARINE MAMMAL & TURTLE DIVISION, WEEKLY HIGHLIGHTS

Week of 23 September 2013

Field work:

Central California Leatherback Turtle Research, Monterey Bay, CA, September – October 2013 – This project focuses on leatherback turtle foraging ecology in what has been identified as a foraging hotspot for this species. It uses small boats and aerial platforms to assess distribution, abundance, feeding behavior, and movement patterns. Perfect conditions last week indeed revealed a foraging hotspot of leatherback turtles along the coast between Monterey Bay and San Francisco (see figure below). The team will be based in Half Moon Bay this week. Contact Scott.Benson@noaa.gov for more information.



Southern Resident Killer Whale (SRKW) Health and Condition Research, Puget Sound, WA, September - In collaboration with the Center for Whale Research, MMTD scientists John Durban and Holly Fearnbach are quantifying body condition, size and growth of individual southern resident killer whales using aerial photographs and photogrammetric methods in order to assess the nutritional status of these Endangered whales. Funded by the NOAA Northwest Fisheries Science Center, this is a continuation of work first conducted in 2008, using a helicopter platform to obtain vertical images of whales from above in order to measure key morphometrics. The project ended last week with a total of nine hours of helicopter flights conducted over 5 days throughout the month of September. Guided by boat support, SRKWs were located on each flight, and a total of 6974 aerial images were obtained during encounters with whales primarily in U.S. waters to the west and south of San Juan Island, WA, and on one day off the southeast Vancouver Island, Canada. The Center for Whale Research vessel "Orca", a 6.5m Boston Whaler, was also photographed from the air on each day, to provide calibration photographs of an object of know size (and approximate whale size). Initial examination of the photographs is very encouraging, with many capturing images of individually-recognizable whales that appear to be measurable for body conditions (widths), size and growth (lengths), or both. Although yet to be confirmed by detailed analysis of individual identifications and formal measurements, we estimate to have measurable images of 70 distinct whales from a current population census of 81, representing more than 85% of the extant population. Most (45) of these whales were also represented in the 2008 aerial photogrammetry sample, despite losses (deaths) and additions (births) over the 5 years between funded efforts. Pending funding, analysis of these images will be conducted in 2014 to begin an examination of temporal changes in body condition of individual whales to assess changes of at-risk age/sex/reproductive classes relative to Chinook salmon abundance. Contact John.Durban@noaa.gov for more information.

Southern California Behavioral Response Studies of Cetaceans to Simulated Navy Sonar, Southern California Bight, weeks of 9 and 16 September - Jay Barlow and Jennifer Keating are on the Research Vessel TRUTH conducting passive acoustic monitoring focused on detection of beaked whales as part of a larger research project designed to tag cetaceans in order to quantify behavioral responses to simulated Navy Sonar. Weather has prevented work (and therefore, detection of beaked whales) offshore, so the team has been concentrating on Risso's dolphins and fin whales. The project has a brief "stand-down" day after a Risso's dolphin stranded on Manhattan Beach a day after their playback of simulated Navy sonar in nearby waters. The animal subsequently died, but a necropsy revealed that it was emaciated and had pancreatitis, so it is unlikely that the stranding was related to any playback activities. Contact Jay.Barlow@noaa.gov for more information.



Photos (above) - D-tag on a fin whale; fin whale surface lunge feeding; tagging of a Risso's dolphin.

Aerial Photogrammetric Survey of Blue Whales, Southern California Bight, 18-20 September - Eastern North Pacific (ENP) blue whales (*Balaenoptera musculus sp.*) migrate in summer from tropical and sub-tropical waters off Central America and Mexico to coastal feeding grounds mainly off of California. Additionally, some blue whales migrate farther north to feeding areas off of Oregon, Washington and British Colombia and ENP blues are occasionally found in the Gulf of Alaska. Jim Gilpatrick and Morgan Lynn conducted this survey to capture vertical aerial photographs to further describe the morphometrics of this unique population, and to quantify body condition and health/nutritional status through width measurements. Of particular interest is the nutritional status of nursing blue whale cows that are photographed with large calves at this time of the year. Blue whale photos are also reviewed for physical evidence of ship strikes and/or entanglement with commercial fishing gear. Individual blue whales can be identified in the images based on unique color mottling patterns, providing a data set for ongoing use in the future. During 12 hours of flight time approximately 45 blue whales were sighted (including two cow/calf pairs) and photographed during approximately 200 aerial photo-passes. ENP blue whales are normally found in large groups (of up to 30 individuals) feeding on krill swarms in the Santa Barbara Channel. This summer they were south of the Channel and loosely associated with the 100 fathom isobath and close to the Nine Mile Bank and the Coronado Islands west of San Diego as they fed on krill. Flocks of shearwaters, pelicans, western gulls, and terns, and minke whales were also associated with these krill patches. Sightings of blue whales continue to be made from the SWFSC (including this past weekend). Take a walk up to the big eyes and find a few this week. Contact Jim.Gilpatrick@noaa.gov for more information.

Photos (above): A blue whale, with mouth wide open and gular pleats spread, feeds on krill near the surface; female-calf blue whale pair.

Week of 16 September 2013

Field work:

Central California Leatherback Turtle Research, Monterey Bay, CA, September – October 2013 – This project focuses on leatherback turtle foraging ecology in what has been identified as a foraging hotspot for this species. It uses small boats and aerial platforms to assess distribution, abundance, feeding behavior, and movement patterns. Thanks to a local pool of observers and experienced turtle-wranglers from Moss Landing Marine Laboratories, Scott Benson was able to take advantage of an early good-weather window last week (week 2 of the project) and begin aerial surveys and sampling before the primary SWFSC turtle team arrived on Sunday Sep 9. One leatherback was successfully captured and tagged with an Argos transmitter on Sep 7, and a TDR was attached to a second free-swimming turtle for an overnight deployment. The TDR from the second turtle was successfully recovered the next day, yielding a valuable day/night dive record. The captured turtle was carrying a PIT tag in the right shoulder that was applied at Papua Barat, Indonesia during June 2012. This is the first time in our project's 13-year history that we have sampled a turtle off California that was originally tagged at one of the western Pacific nesting beaches, representing a significant milestone that demonstrates the enhanced monitoring capacity of SWFSC's Indonesian colleagues. The tagged female turtle weighed 585 kg and was in excellent condition. Upon release, the turtle moved offshore. Sea nettles, the primary prey species of leatherbacks in neritic California waters, have been abundant this year, so she may have had her fill and begun her migration back to the western Pacific. Aerial surveys continue whenever weather conditions are favorable. Within Monterey Bay, humpback whales, ocean sunfish, and sea nettles remain abundant, but leatherback densities appear too low for effective in-water sampling efforts. By the end of the coming week, when sighting conditions are forecast to improve and the NOAA Twin Otter will have completed its scheduled 100-hr maintenance, the team expects to move operations north to the San Mateo coast, where a greater number of leatherbacks were seen on Sep 3. Jeff Seminoff departs 18 Sept to join the field team through 28 September. Contact Scott.Benson@noaa.gov for more information.

Southern Resident Killer Whale Health and Condition Research, Puget Sound, WA, September - In collaboration with the Center for Whale Research, MMTD scientists John Durban and Holly Fearnbach are quantifying body condition, size and growth of individual southern resident killer whales using aerial photographs and photogrammetric methods in order to assess the nutritional status of these Endangered whales. Funded by the NOAA Northwest Fisheries Science Center, this is a continuation of work first conducted in 2008, using a helicopter platform to obtain vertical images of whales from above in order to measure key morphometrics. In total, 6973 aerial images have been obtained from 8 hours of helicopter flights over the past two weeks and measurable images from >70 individual whales, from a current population of 81, have been obtained. Contact John.Durban@noaa.gov for more information.

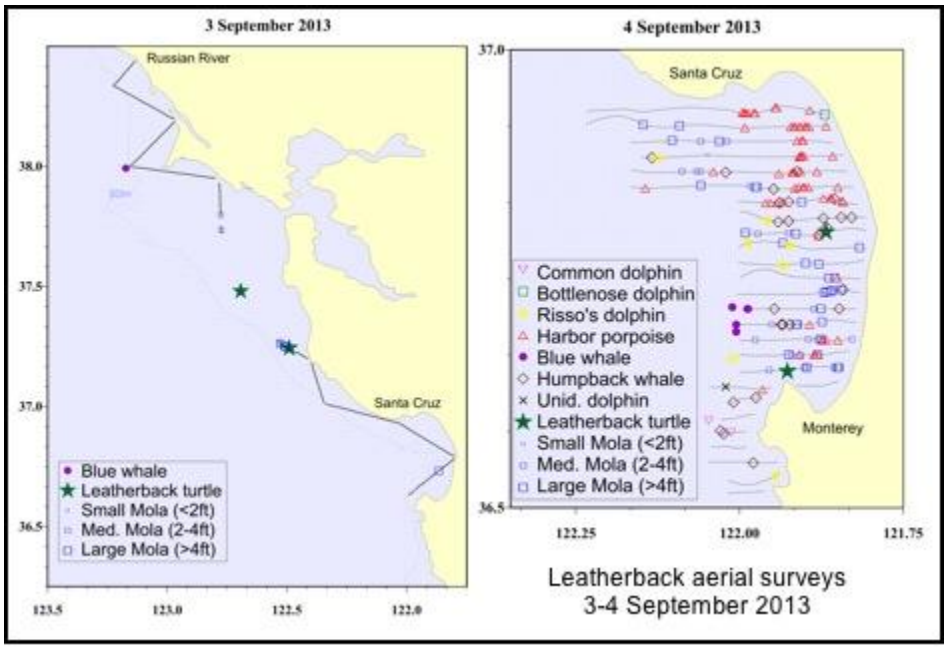
Photo Above (Holly Fearnbach): An impressive line-up of Southern Resident Killer Whales. Research approach authorized by National Marine Fisheries Permit # 15569.

Southern California Behavioral Response Studies of Cetaceans to Simulated Navy Sonar, Southern California Bight, weeks of 9 and 16 September - Jay Barlow and Jennifer Keating are on the Research Vessel TRUTH conducting passive acoustic monitoring as part of a larger research project designed to tag cetaceans in order to quantify behavioral responses to simulated Navy Sonar. To date there have been sightings of Ziphius, Grampus, and Balaenoptera physalus, and Controlled Exposure Experiments on the latter two species. Contact Jay.Barlow@noaa.gov for more information.

Week of 9 September 2013

Field work:

Central California Leatherback Turtle Research, Monterey Bay, CA, September – October 2013 – This project focuses on leatherback turtle foraging ecology in what has been identified as a foraging hotspot for this species. It uses small boats and aerial platforms to assess distribution, abundance, feeding behavior, and movement patterns. The 2013 season had a strong start last week with aerial survey operations aboard the NOAA Twin Otter N56RF, supported by pilots John Rossi and Michael Marino. SWFSC/MMTD staff Scott Benson and Karin Forney, along with contractors Elizabeth Becker and Melinda Nakagawa, completed two surveys on 3-4 September between Monterey Bay and the Russian River. Weather conditions were good to excellent, and five leatherback turtles were sighted, including two in Monterey Bay and three off the San Mateo County coast. Brown sea nettles, an important prey species for leatherback turtles, were very abundant. Many cetacean species were also recorded, including harbor porpoise, bottlenose dolphin, Risso's dolphin, common dolphin, blue whale, and humpback whale. Aerial surveys will continue throughout the month of September, as weather permits, in support of leatherback tagging efforts, foraging studies, and health assessments. Several additional SWFSC team members from La Jolla (Erin LaCasella, Dan Prosperi, Joel Schumacher, Camryn Allen, Tomo Eguchi, Jun Okuyama, and Peter Dutton) will join the project this coming week for aerial surveys and leatherback turtle sampling. The leatherback aerial surveys will also provide data in support of a separate study conducted by Eiren Jacobson (SIO doctoral student) and Karin Forney to monitor harbor porpoise in Monterey Bay using passive acoustic moorings (CPODs). Visual harbor porpoise data from the fine-scale aerial surveys will be compared to the acoustic records collected on eleven CPODs deployed in late August 2013, to cross-calibrate the two monitoring techniques. Contact Scott.Benson@noaa.gov for more information.



Southern Resident Killer Whale Health and Condition Research, Puget Sound, WA, September - In collaboration with the Center for Whale Research, MMTD scientists John Durban and Holly Fearnbach are quantifying body condition, size and growth of individual southern resident killer whales using aerial photographs and photogrammetric methods in order to assess the nutritional status of these Endangered whales. Funded by the NOAA Northwest Fisheries Science Center, this is a continuation of work first conducted in 2008, using a helicopter platform to obtain vertical images of whales from above in order to measure key morphometrics. Last week (the first of the 2013 season) was very successful; >3000 images during four hours of helicopter operations were collected. Guided by Center for Whale Research research boat, the team has been able to effectively spread

coverage across individual whales. At this writing, they estimate to have measurable photographs from approximately 40 different whales (pending analysis), representing about half of the population. For more information contact John.Durban@noaa.gov

Aerial photograph (above) taken in September 2013 from a helicopter platform above southern resident killer whales . Research approach authorized by National Marine Fisheries Permit # 15569. Photo by Holly Fearnbach.

Green Sea Turtle Ecological Research, Orange County, CA - Members of the SWFSC/MMTD Jeff Seminoff, Tomo Eguchi, and Joel Schumacher conducted field work in San Gabriel River and Seal Beach National Wildlife Refuge on 28-29 August. This project is a collaboration between biologists at SWFSC and the Southwestern Regional Office in Long Beach (PIs Dan Lawson and Tina Fahy). Three green turtles were captured: they ranged in size from 54 to 75 cm straight carapace length and 21 to 60 kg in body weight. All turtles were equipped with ultrasonic transmitters as part of an ongoing study of habitat use in the area. Contact PIs Tomo.Eguchi@noaa.gov or Jeffrey.Seminoff@noaa.gov for more information.

Press:

Turtles are bay's best-kept secret (**Jeff Seminoff**)
http://www.utsandiego.com/news/2013/sep/01/turtles/

Awards, grants and recognition:

SWFSC-SIO Doctorate Student becomes "Dr." – Alyson Fleming successfully defended her doctoral dissertation "Characterizing population structure of cetaceans within as ecological context" last week. Congratulations Dr. Fleming!

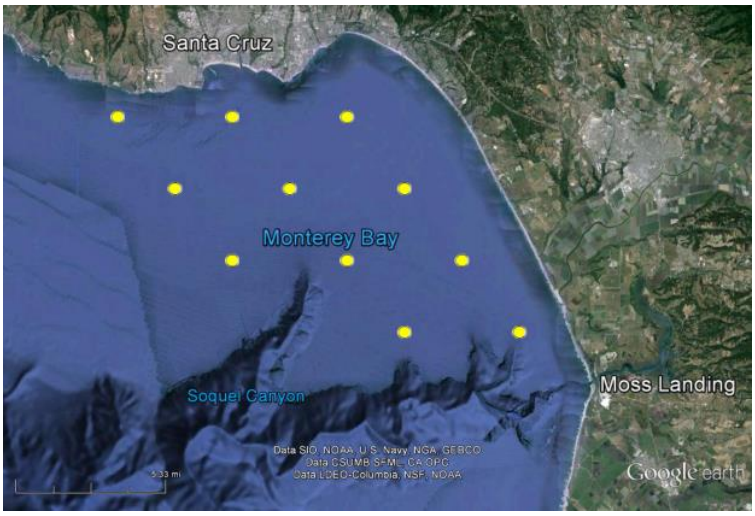
Week of 2 September 2013

Field work:

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands, July – August – The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project and last week ended the 2013 season. On the last night, a single female turtle was nesting (late in the season!) but no hatchlings emerged. The last week added samples from 45 hatchlings from 7 nests to the collection, making the grand total for 2013 5,672 hatchlings sampled. Contact Peter.Dutton@noaa.gov or Kelly.Stewart@noaa.gov for more information.

Photo Above: One of the final hatchlings of the season makes its way to the water.

Harbor Porpoise Passive Acoustic Research, Monterey Bay, CA - Eiren Jacobson (SIO student) and Karin Forney successfully designed, assembled and deployed a network of 11 acoustic moorings (see map below) during the past two weeks to monitor harbor porpoise in Monterey Bay, CA. Moss Landing Marine Laboratories provided logistics, small boat, and diver support for this collaborative SWFSC//MLML project funded under a grant from the California Institute for Energy and Environment. The deployments went very well, requiring three half-days on the water. For the eleven moorings, 5 acoustic releases with expendable concrete anchors, and 6 fully-retrievable diver-deployed moorings with sand anchors were used. The study is a pilot project to develop design criteria for using passive acoustic methods to monitor trends, abundance, and potential impacts of marine renewable energy facilities (or other anthropogenic activities) on harbor porpoise off California. The moorings will remain in place for about 4 months, with retrieval scheduled in early January 2014. Coordinated aerial surveys are planned for October (when weather conditions are generally best) to obtain paired visual/acoustic data on porpoise occurrence. Eiren Jacobson plans to analyze the collected data as part of her doctoral research at SIO. Contact Karin.Forney@noaa.gov for more information.



Southern Resident Killer Whale Health and Condition Research, Puget Sound, WA, September - In collaboration with the Center for Whale Research, MMTD scientists John Durban and Holly Fearnbach will this week begin a month-long field effort to assess the body condition, size and growth of individual southern resident killer whales, in order to assess the nutritional status of these Endangered whales. Funded by the NOAA Northwest Fisheries Science Center, this is a continuation of work first conducted in 2008, using a helicopter platform to obtain vertical images of whales from above in order to measure key morphometrics. This project is based on San Juan Island, WA, and will continue through the month of September. For more information contact John.Durban@noaa.gov.

Gray Whale Population Abundance & Trends Research, Granite Canyon, CA - The Granite Canyon Research Lab has been the site for shore-based surveys of southbound gray whales since the 1960s. The facility is located along a section of coast that is isolated from the noise of port facilities and at a point where the shallow shelf that migrating whales follow is close to the shore. In the past few years, we have taken some major steps to improve both the accuracy and precision of abundance estimates by improving the basic techniques used for counting and tracking whales as they migrate south. We are now poised to make another major improvement to this assessment effort by using thermal sensors linked to an automated counting algorithm to supplement the effort of the visual team. Under Phase II of an SBIR proposal, Toyon Corp has installed a system at Granite Canyon that feeds directly into a set of computers that will monitor the output from the sensors, detect blows, estimate pod sizes and produce counts of passing whales (see photo). The system will only perform effectively during excellent weather conditions, but when the weather is adequate it can collect data 24 hrs/day. If this system performs as expected it will allow us to reduce the cost of the surveys by shortening the field season for visual watch teams and addressing the issue of calibration factors for differences between day and night migration rates. We plan to collect standard visual data to compare with the estimates from the sensors this January. Contact Wayne.Perryman@noaa.gov for more information.

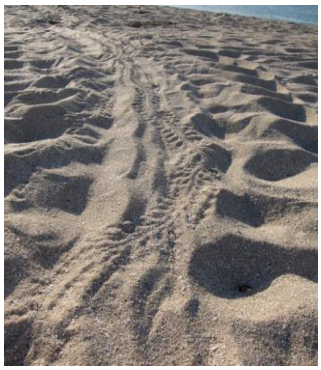
San Diego Coastal Bottlenose Dolphin Research – As part of a joint SWFSC/SIO collaborative research program on coastal bottlenose dolphins, Dave Weller and Greg Campbell (SIO) conducted a small boat survey off San Diego on 30 August. Three groups totaling 45 dolphins were encountered and more than 800 digital photo-identification images and one biopsy sample were collected. In addition, two groups of common dolphins were observed and three blue whales were photo-identified and biopsied. For more details on this project please contact Dave.Weller@noaa.gov .

Press:

Why Were Sea Lions Starving? (Sarah Wilkin, Russ Vetter, **Mark Lowry**)
http://www.onearth.org/articles/2013/08/sea-lion-pups-starved-this-year-in-the-waters-off-california

Week of 19 August 2013

Field work:



Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands, July – August – The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. As nests continue to produce hatchlings in good numbers, we have extended the season through August 31st. This week the team saw more good emergences and they were able to sample 15 more nests. The milestone of 5,000 samples for the year has been exceeded; we now have 5,325 samples for the season. Contact Peter.Dutton@noaa.gov or Kelly.Stewart@noaa.gov for more information.

Photo: A hatchling track crosses over a female turtle track at Sandy Point.

Press:

Deadly Sea Lion Mystery Draws Biologists to Remote Island in Search of Clues (**Mark Lowry**)
http://www.wired.com/wiredscience/2013/08/island-sea-lion-pupdate/

Baby Boom of Gray Whale Calves Complete First Migration (**Wayne Perryman**)
http://www.kpbs.org/news/2013/aug/14/baby-boom-gray-whale-calves-complete-first-migrati/

Other of Note:

ETP Spinner Dolphin Genetic Sampling, The Smithsonian Institution's National Museum of Natural History, Washington D.C. – The goal of this project is to describe a cline of variation in whitebelly and eastern spinner dolphins in the eastern tropical Pacific (ETP) Ocean. Last week, Matt Leslie - SIO PhD Candidate conducting dissertation research with the MMTD Genetics Group - visited the NMNH's Marine Mammal collection in Suitland, Maryland to collect teeth from ETP spinner dolphin skulls. These specimens were collected from the tuna-purse seine fishery and accessioned by Bill Perrin and colleagues in the 1970's and 80's. These skulls represent a unique opportunity to marry morphometrics, external body features and environmental data with genetics for a complete characterization of this rare clinal phenomenon. Matt will add the genetic component of this study by extracting DNA from the teeth and genotyping selected SNP

markers. Matt collected teeth from 118 dolphins during his visit to the NMNH. He will be collecting material from additional skulls accessioned in the Los Angeles County Museum and the San Diego Natural History Museum in the coming weeks. Contact: Matthew.Leslie@noaa.gov for more information.

Photo Above: Matthew Leslie with spinner dolphin skull collection at the National Museum of Natural History, Washington D.C.

Week of 12 August 2013

Field work:

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands, July – August – The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. With nesting continuing into August this year (there were 2 leatherback nests on August 7th), we have several more nests to sample before the end of the month. We reached and surpassed our milestone of 25,000 samples collected since the start of this project, five years ago. The sample count for this year stands at 4,860 and we expect to pass 5,000 for this year alone. This was not expected as there are about as many nests as last year when we collected 3,266 samples. Contact Peter.Dutton@noaa.gov or Kelly.Stewart@noaa.gov for more information.

Photo Above: Two hatchlings from the same nest vary in size.

Southern California Behavioral Response Studies (SoCal BRS), Southern California Bight, weeks of 29 July and 5 August - The first leg of the 2013 SoCal BRS ended last week. This is a multi-institutional study of the response of cetaceans to Navy sonar. This year marks a milestone in this 5-year study in being the first year to use an actual Navy ship as the experimental sound source. This year, behavior-recording tags were deployed on blue whales, fin whales, Risso's dolphin, and Cuvier's beaked whales. One of the Cuvier's beaked whales was exposed to actual Navy sonar (at a range of over 20 miles) and the other species were exposed to either controls (no sound) or simulated Navy sonar. The SWFSC team was composed of Jay Barlow, Jeff Moore, Karin Forney, Jennifer Keating and SIO student Eiren Jacobson aboard an independent visual and acoustic survey vessel (a 65' motor-sailer *Derek M. Baylis*). Together with Cascadia contractor Sophie Webb, they were tasked with (and successful in) finding long-diving whales (especially beaked and sperm whales) for tagging and playback studies. On the last day of survey effort, the acoustic team localized and tracked down a sperm whale (previously named "Mango") that had been seen on each year of the SOCAL-BRS program since 2010. New acoustic gear tested on this cruise included a modified SWFSC-designed Towed Tetrahedral Hydrophone Array and a Drifting Acoustic Spar Buoy Recorder (DASBR) system. Contact Jay.Barlow@noaa.gov for more information.

Press:

U.S. Navy Ships Participate in Marine Mammal Studies (**MMTD's science featured**)
www.yumanewsnow.com/index.php/news/latest/3936-u-s-navy-ships-participate-in-marine-mammal-studies

Wild turtle chase/With changes to bay, green sea turtles strike out for new depths (**Jeff Seminoff**)
http://www.utsandiego.com/news/2013/aug/03/environment-green-sea-turtles-san-diego-bay/

Week of 5 August 2013

Field work:

Southern California Behavioral Response Study (SoCal BRS), Southern California Bight, weeks of 29 July – 5 August – This is a multi-year, collaborative project to study of the response of cetaceans to Navy sonar. Cetaceans will be tagged to monitor their behavior and will then be exposed to Navy sonar-type signals. In previous years, a simulated sonar source was used that was two orders of magnitude less than an actual Navy ship. This year, a Navy vessel will be provided during a portion of this project. The expected sound exposure will be similar, but the vessel will be much farther away from the animals and thus the effect of range can be tested. The SWFSC effort is conducted on a stand-alone passive acoustic survey vessel named the *Derick Baylis*, a 65' motor sailer. The acoustic team includes Jay Barlow, Jennifer Keating, and Eiren Jacobson, and the visual survey team Karin Forney, Jeff Moore and Sofie Webb (Cascadia Research). This collaboration will also include researchers from Cascadia Research, Southall Environmental Associates, University of St. Andrews, Duke University, and the U.S. Navy all working aboard a separate vessel, the *Truth*. Contact Jay Barlow for more information.

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands, July – August – The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. Going into August, the weather has been hot and dry and hatching has been earlier in the evening than usual. To date, 4,425 samples have been collected and several more nests are expected this month. We are now only 222 samples away from the milestone of 25,000 samples collected on this project and expect to surpass this over the weekend. Contact Peter Dutton (Peter.Dutton@noaa.gov) or Kelly Stewart (Kelly.Stewart@noaa.gov) for more information.

Photo Above: Shane Morales and Violet Campbell (STAR Fellows) and assistant Drue Frey test the fitness of hatchlings that have just emerged by placing them in a 2-meter arena.

Week of 29 July 2013

Field work:

Mark Lowry and Jim Carretta will conduct pinniped field studies at San Clemente Island during 26-29 July 2013. While at the island they will census California sea lions and northern elephant seals, and collect California sea lion scat samples for diet studies.

Mark Lowry and Susan Chivers will conduct pinniped field studies at San Nicolas Island during 30 July-1 August 2013. While at the island they will collect California sea lion scat samples for diet studies.

Southern California Behavioral Response Study – This week, a team of scientists from the SWFSC left to participate in the first 2-week leg of the Southern California Behavioral Response Study (SoCal-BRS). This is a multi-year, collaborative project to study of the response of cetaceans to Navy sonar. Cetaceans will be tagged to monitor their behavior and will then be exposed to Navy sonar-type signals. In previous years, a simulated sonar source was used that was two orders of magnitude less than an actual Navy ship. This year, a Navy vessel will be provided during a portion of this project. The expected sound exposure will be similar, but the vessel will be much farther away from the animals and thus the effect of range can be tested. The SWFSC effort will be in a stand-alone passive acoustic survey vessel named the *Derick Baylis*, a 65' motor sailer. The acoustic team will include Jay Barlow, Jennifer Keating, and Eiren Jacobson, and the visual survey team will include Karin Forney, Jeff Moore and Sofie Webb (Cascadia Research). This collaboration will also include researchers from Cascadia Research, Southall Environmental Associates, University of St. Andrews, Duke University, and the U.S. Navy all working aboard a separate vessel, the *Truth*.

Bottlenose Dolphin Health Assessment, Mississippi Sound, 29 July - 5 August 2013 - A team of NOAA Scientists and other collaborators are conducting health assessments on bottlenose dolphins in the Mississippi Sound as part of the Deepwater Horizon (DWH) Natural Resource Damage Assessment (NRDA). Joel Schumacher (Marine Turtle Ecology & Assessment Program) will join other wildlife biologists, veterinarians, and epidemiologists on the catch and release team for the remaining week of the project.

San Diego Coastal Bottlenose Dolphin Research – As part of a joint SWFSC/SIO collaborative research program on coastal bottlenose dolphins, Dave Weller and Greg Campbell (SIO) conducted a small boat survey off San Diego on 26 July. Five groups totaling 21 dolphins were encountered and more than 400 digital photo-identification images were collected. In addition, one group of common dolphins (totaling ~ 90 individuals) and one blue whale were observed. In collaboration with John Durban, during this survey we successfully initiated the use of laser-metric photogrammetry to obtain morphometric measurements of bottlenose dolphins. For more details on this project please contact Dave Weller.

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands– The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. This week hatching continued to be very good, with 50-60 hatchlings emerging from each natural nest. To date, the team has sampled 91 nests and 3,598 hatchlings. Tropical Storm Dorian is expected later this weekend and may bring some wind and rain to the island. Three additional volunteers arrive this weekend (Amy, Mike and Jodi – all have volunteered in previous years). For more information contact Peter Dutton (Peter.Dutton@noaa.gov) or Kelly Stewart (Kelly.Stewart@noaa.gov).

Clockwise from top left: (1) Erin LaCasella marks a nest that has just emerged. (2) STAR Fellow Violet Campbell and volunteer Christella Campbell assess a recent green turtle crawl. (3) Visitors to the project, Wendy Dow (left; Knauss Marine Policy Fellow at NOAA) and Carrie Selberg (right; NOAA Fisheries Chief of Staff) monitor an emerging nest.

Awards, grants and recognition:

Bill Perrin's last day in Federal service will be 2 August, marking the end of chapter in what is a distinguished and remarkable career. Bill has served as a dependable resource, mentor and colleague since he joined Southwest Fisheries Science Center 46 years ago, and we look forward to continuing to work with him on a number of ongoing projects in the future. He will spend Friday, fittingly, discussing the tuna-dolphin issue with students and colleagues at a Scripps Institution of Oceanography symposium. We are excited to celebrate with him as a Center and a Division following his retirement on the 8th. Congratulations, Bill! While Friday by no means signals the end of your career, it is an opportune time to reflect and thank you for your seemingly countless contributions to marine mammal science, your unwavering scientific integrity, and your friendship.

Week of 22 July 2013

Field work:

Aerial Survey of Steller Sea Lion Rookeries, British Columbia and Alaska - Morgan Lynn continues to work with a team from AFSC that is collecting vertical aerial photographs of Steller sea lion rookeries in British Columbia and Alaska. Contact Wayne Perryman for more information.

2013 Sardine-Hake Survey, Annette Henry will participate on the Fisheries Resources Division's Sardine-Hake (Sake) Survey during 22 July – 11 August.

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands– The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. Another great week in St. Croix for the project. The sample count is now at 2,727 and nest hatching continues to be good. In addition, females are still nesting (about 5 within the last week). Erin LaCasella is now with the team and Amy Frey arrives on July 21st. For more information contact Peter Dutton (Peter.Dutton@noaa.gov) or Kelly Stewart (Kelly.Stewart@noaa.gov).

A nest emerges and hatchlings head down the beach.

Week of 15 July 2013

Field work:

Aerial Survey of Steller Sea Lion Rookeries, British Columbia and Alaska - Morgan Lynn continues to work with a team from AFSC that is collecting vertical aerial photographs of Steller sea lion rookeries in British Columbia and Alaska. Contact Wayne Perryman for more information.

California and Steller Sea Lion Aerial Survey, California and Oregon - On July 5th Mark Lowry began an aerial photographic survey of Steller sea lions and California sea lions at the Channel Islands in southern California and along the mainland coast from Point Conception, California to Cape Blanco, Oregon. This survey is ongoing. Contact Mark Lowry for more information.

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands – The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. It was a great week in St. Croix for the project. Despite Tropical Storm Chantal trying to take a swipe at the island earlier this week, there were few effects from the storm and sampling has been going really well. This year there are about as many nests on the beach as last year, but the emergence success has been much higher. We've been getting 50-60 hatchlings from each nest as opposed to last year when 15-30 was the norm. The sample count is now at 2,113. Robin LeRoux arrives July 13th and Alex Gaos is now with the team to learn techniques to apply to hawksbills in Nicaragua and El Salvador later this year. For more information contact Peter Dutton (Peter.Dutton@noaa.gov) or Kelly Stewart (Kelly.Stewart@noaa.gov).

Hatchlings make their way down a sandy slope from a nest.

Alex Gaos points out a leatherback track from the previous evening.

Alex Gaos helps STAR fellow Shane Morales measure hatchlings.

Press:

Ribbon Seal ESA Listing Decision

Listing the ribbon seal under the Endangered Species Act was deemed Not Warranted in the second round of review of the petition to list this ice seal as endangered due to global warming issues. The Biological Review Team, which included Barb Taylor, concluded that "the BRT's collective judgment was that there is a 4% + 13% = 17% chance that the ribbon seal population will decline to 5,000 individuals before the end of the current century". The current population numbers between 200,000 and 300,000.

Their Report and the listing decision can be found at:
http://alaskafisheries.noaa.gov/protectedresources/seals/ice.htm

San Francisco Chronicle

NMFS denies ribbon seal endangered species listing/By DAN JOLING, Associated Press
ANCHORAGE, Alaska (AP) — The federal government has rejected an endangered species listing for a seal species that relies on sea ice for molting and reproducing.
http://ww3.hdnux.com/photos/22/53/22/4895906/3/628x471.jpg
Read more: http://www.sfgate.com/default/article/NMFS-denies-ribbon-seal-endangered-species-listing-4654968.php

Week of 8 July 2013

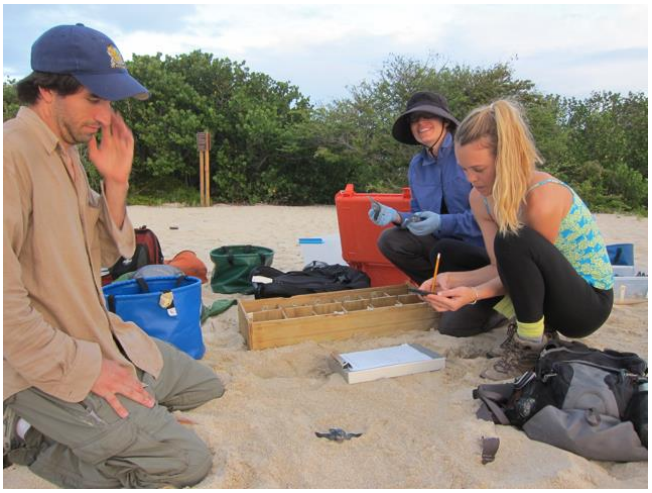
Field work:

Aerial Survey of Steller Sea Lion Rookeries, British Columbia and Alaska - Morgan Lynn continues to work with a team from AFSC that is collecting vertical aerial photographs of Steller sea lion rookeries in British Columbia and Alaska. The effort began two weeks ago in British Columbia, and the team has been stuck in Kodiak for several days due to persistent fog. The 3-camera mount system used for this survey was developed here at the SWFSC, and Morgan acts as the lead camera technician for this effort.

California and Steller Sea Lion Aerial Survey, California and Oregon - On July 5th Mark Lowry began an aerial photographic survey of Steller sea lions and California sea lions at the Channel Islands in southern California and along the mainland coast from Point Conception, California to Cape Blanco, Oregon. The US Navy will provide a chartered aircraft for survey at the Channel Islands. The NMFS Alaska Regional Office provided funds for the Steller sea lion survey in California and Oregon. The Steller sea lion survey in California and Oregon is part of a range-wide survey of the eastern stock of Steller sea lions, with other surveys being conducted in SE Alaska, British Columbia, Washington, and Oregon. The California sea lion survey is being conducted to determine if the Unusual Mortality Event that occurred during winter and spring of 2013 affected pup production. The survey should take 10-14 days to complete.

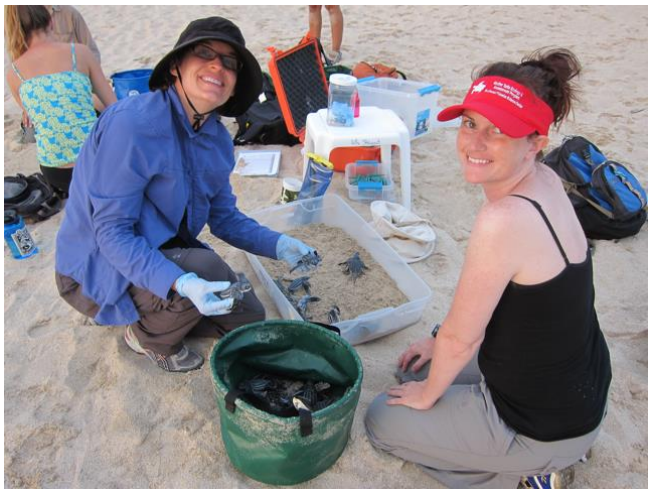
Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands – The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. It was busy week for the field team in St. Croix, several new nests hatched and the sample count now stands at 1,215 hatchlings. This week the team welcomes Duke student Claire Gonzales who will be volunteering for 3 weeks. Two students from the University of Puerto Rico - Cristian Ramirez and Karla Barrientos - also spent 3 evenings with the team to learn techniques to apply to their projects in Puerto Rico. Nesting for leatherbacks has tapered off, but there are a few hawksbills and green turtles starting to nest. For more information contact Peter Dutton (Peter.Dutton@noaa.gov) or Kelly Stewart (Kelly.Stewart@noaa.gov).

Leatherback nest about to emerge on Sandy Point, St. Croix



Shane Morales and Violet Campbell – STAR Teaching Fellow and Sue Roden (background)

testing hatchling fitness prior to sampling.



Camryn Allen and Sue Roden handling leatherback hatchlings

Press:

NMFS announced that they are rejecting the petition to list white sharks in the Northeast Pacific under the Endangered Species Act. The decision is based largely on the status review done by SWFSC. Jeff Moore, Barb Taylor and Tomo Eguchi from MMTD were important team members in contributing much of the modeling and Structured Expert Opinion Making expertise. Charlotte Boyd also helped providing context from her risk analysis work. The Biological Review Team had members from all SWFSC Divisions. Read more about the decision:
http://www.latimes.com/news/local/la-me-0629-great-whites-20130629,0,3365279.story

Odd-Looking Orcas May Be a Distinct Species **(Robert Pitman/John Durban/Phil Morin)**
http://www.wired.com/wiredscience/2013/07/odd-looking-orca-species/

Week of 1 July 2013

Field work:

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands– The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. This week the crew experienced mixed weather with some sunny days and a few days of rain from a couple of tropical waves that moved through the region. Hatching was a little inconsistent but there were some good nights and to date, 28 nests have hatched and 658 hatchling samples have been collected. Nesting continues to be fairly good, with 5 females nesting on June 25th alone. Camryn Allen will join the field effort this week - helping with the hatchling sampling as well as monitoring heart rates 2 on nesting female leatherbacks. Jeff Hester is also with the team – he is now on his year-long scholarship with the Our World - Underwater Scholarship Society and will be participating in both hatchling surveys and nesting female surveys to gain experience with turtle field biology. Contact Peter.Dutton@noaa.gov or Kelly.Stewart@noaa.gov for more information.


Photos Above: Team with nest (Natalie Williams – FWS, Carla – local volunteer, Violet Campbell – STAR Teaching Fellow, Jeff Hester and Sue Roden); Adult female leatherback nesting track at Sandy Point, St. Croix.

Press:

Science Daily: Turtles Have Fingerprints? New Genetic Technique Reveals Paternity and More (**Dutton, Stewart**)
http://www.sciencedaily.com/releases/2013/06/130624143922.htm
National Geographic: Rare breed of killer whale may be new species (**Morin, Pitman**)
http://news.nationalgeographic.com/news/2013/06/130627-killer-whale-orca-new-species-animal-science/
NOAA Fisheries Podcast: The case of the dead dolphin (**Danil, Chivers, Beaulieu**)
http://www.nmfs.noaa.gov/podcasts/index.html

Week of 24 June 2013

Field work:

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands– The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. This season's effort began June 17th with Kelly Stewart and local volunteers sampling 9 nests and collecting 227 hatchlings (see photo by Kelly Stewart). So far a total of about 350 nests have been laid over the last 3 months, and these are among the first batch to hatch. Team members joining this week include Suzanne Roden and volunteer Kaitlyn Moorehead. In addition Shane Morales and Violet Campbell are joining as Fellows with the STAR Research Teacher Program sponsored by the California State University (in partnership with many other organizations). Contact Peter.Dutton@noaa.gov or Kelly.Stewart@noaa.gov for more information.

Green Turtle Ecological Research, San Diego Bay - The SWFSC green turtle research team continued field activities on Tuesday, June 18th and was successful at capturing two large female turtles. Both were recaptures from previous seasons (each has been captured 7 times!). One of the animals was originally tagged in 1990 and was an adult when it was first captured (SCL = 85.0 cm, Weight = 88 kg). She now measures 101.1 cm SCL and weighs 146 kg. The second animal was originally caught in 2004 and it weighed 18 kg. It now weighs 118 kg. Both animals were equipped with a GPS-Video-Depth tag that will collect fine-scale information on movement and habitat use in San Diego Bay. With the closure of the South Bay Power Plant, this information will help SWFSC scientists understand green turtle behavior in the post-Power Plant era. For more information on the project contact PIs Tomo Eguchi or Robin LeRoux. For details of tracking efforts contact Jun Okuyama.

Health Assessment of Bottlenose Dolphins, Barataria Bay, LA, 15-30 June - Nick Kellar will participate in Natural Resource Damage Assessment research focused on health assessments of bottlenose dolphins exposed to the Deepwater Horizon oil spill. Nick's work will use blubber samples from 20-30 animals to assess the relative concentrations/dynamics of stress hormones in this population. Contact Nick.Kellar@noaa.gov for more information.

Bottlenose Dolphin Abundance Research, Pamlico Sound, NC, 14-30 June - Tomo Eguchi is participating in a photographic capture-mark-recapture project focused on the Northern North Carolina Estuarine Stock of bottlenose dolphins. PBR has been exceeded for this stock due to entanglements in gillnets, a situation confirmed at a Take Reduction Team meeting, and this research will produce an updated abundance estimate. Eguchi is involved in sampling design, data collection, and data analysis for this SEFSC-funded project. Contact Tomo.Eguchi@noaa.gov for more information.

Bahamas Odontocete Survey, 22 May – 23 June, Great Bahama Canyon – This project, with a goal of collecting baseline data on movement and diving behavior of odontocetes by deploying satellite tags to provide a context for interpreting behavioral responses to sonar exposure at the US Navy's Atlantic Test and Evaluation Center (AUTEC) in the northern Bahamas, came to a successful close this past week. A total of 10 sperm whales, 3 Cuvier's beaked whales, and 2 melon-headed whales are now carrying tags which will provide valuable information in the days, weeks, and (hopefully) months to come. Contact John.Durban@noaa.gov for more information.

Press:

DNA Sheds Light on Rare Killer Whale Type **(Philip Morin/Robert Pitman/John Durban)**
http://www.livescience.com/37580-dna-sheds-light-on-rare-killer-whale.html

Week of 17 June 2013

Field work:

Leatherback Turtle Genetic Tagging/Demography Research, St. Croix, US Virgin Islands– The goal of this project is to genetically tag leatherback turtle hatchlings in order to learn basic demographic parameters (which remain virtually unknown for marine turtles in general). This is the fifth year of this project. Kelly Stewart and Sue Roden will open the 2013 hatchling sampling effort the week of June 17th. Contact Peter.Dutton@noaa.gov or Kelly.Stewart@noaa.gov for more information.

Health Assessment of Bottlenose Dolphins, Barataria Bay, LA, 15-30 June - Nick Kellar will participate in Natural Resource Damage Assessment research focused on health assessments of bottlenose dolphins exposed to the Deepwater Horizon oil spill. Nick's work will use blubber samples from 20-30 animals to assess the relative concentrations/dynamics of stress hormones in this population. Contact Nick.Kellar@noaa.gov for more information.

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Bahamas Odontocete Survey, 22 May – 23 June, Great Bahama Canyon – Ongoing – this research aims to collect baseline data on movement and diving behavior of odontocetes by deploying satellite tags to provide a context for interpreting behavioral responses to sonar exposure at the US Navy's Atlantic Test and Evaluation Center (AUTEC) in the northern Bahamas. To date, tags have been deployed on 3 Cuvier's beaked whales, 4 Sperm whales, and 2Melon headed whales. Contact John.Durban@noaa.gov for more information.

Press:

Turtles Have Fingerprints?

New genetic technique reveals paternity and more. MMTD's sea turtle research featured on NMFS' home page. (**Kelly Stewart, Peter Dutton**)

Week of 10 June 2013

Field work:

Bahamas Odontocete Survey, 22 May – 23 June, Great Bahama Canyon – Ongoing – this research aims to collect baseline data on movement and diving behavior of odontocetes by deploying satellite tags to provide a context for interpreting behavioral responses to sonar exposure at the US Navy's Atlantic Test and Evaluation Center (AUTEC) in the northern Bahamas. For more information contact John.Durban@noaa.gov

Green Turtle Research, 29 May – 8 June, San Jose, Costa Rica - Michael Jensen met with research partners and participated in a site visit to assess foraging populations of green turtles at Isla Murcielago on the Pacific Coast.

Awards, grants and recognition:

MMTD-SIO Doctorate Student Receives Post-doctoral Fellowship - Alyson Fleming has been awarded a Knauss Postdoctoral Fellowship to begin in February 2013, with the Executive Branch (details to be determined). She plans to defend her dissertation in September. Congratulations Aly!

MMTD-SIO Doctorate Student Advances to Candidacy – Cotton Rockwood successfully presented his doctoral research proposal "Tools for a holistic approach to at-sea seabird conservation in the Pacific Ocean" at his qualifying exam on 4 June. Congratulations Cotton!

Week of 3 June 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – The 2013 survey came to a close last week on Friday, 31 May, after three consecutive days with no sightings. This year's total cow-calf count is 313, in the upper half of count totals for the 20-year time series. Contact Wayne Perryman for more information or see http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464.

Green Turtle Ecological Research, San Diego Bay - The SWFSC green turtle research team continued field activities on Thursday, May 30th and was successful at capturing a large juvenile green turtle. The turtle measured 71.6 cm in straight carapace length and weighed 70 kg. It was equipped with a GPS-Video-Depth tag that will collect fine-scale information on movement and habitat use in San Diego Bay. With the closure of the South Bay Power Plant, this information will help SWFSC scientist understand green turtle behavior in the post-Power Plant era. For more information on the project contact PIs Tomo Eguchi or Robin LeRoux. For details of tracking efforts please contact Jun Okuyama.

Bahamas Odontocete Survey, 22 May – 23 June, Great Bahama Canyon – Ongoing – this research aims to collect baseline data on movement and diving behavior of odontocetes by deploying satellite tags to provide a context for interpreting behavioral responses to sonar exposure at the US Navy's Atlantic Test and Evaluation Center (AUTEC) in the northern Bahamas. For more information contact John.Durban@noaa.gov

Press:

Type C personality/'Ross Sea' killer whale one of several species found around Antarctica (**Robert Pitman/John Durban**)

http://antarcticsun.usap.gov/science/contenthandler.cfm?id=2853

Week of 27 May 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – Seven more cow-calf pairs were recorded last week, bringing the season total to 310. See http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464 and contact Wayne Perryman for more information.

Bahamas Odontocete Survey, 22 May – 23 June, Great Bahama Canyon – The survey begins this week. Over the next month scientists from the MMTD (John Durban, Holly Fearnbach, Trevor Joyce) will be participating in collaborative field work to deploy satellite tags on cetaceans in the Great Bahama Canyon. This collaboration with the Bahamas Marine Mammal Research Organization, and funding from the Strategic Environmental Research and Development Program (SERDP), aims to collect baseline data on movement and diving behavior of odontocetes in the region to provide a context for interpreting behavioral responses to sonar exposure at the US Navy's Atlantic Test and Evaluation Center (AUTEC) in the northern Bahamas. This is the third and last of three annual surveys since 2011, with focus on six priority species: Cuvier's beaked whales, Blainville's beaked whales, Gervais' beaked whales, sperm whales, melon-headed whales and short-finned pilot whales. For more information contact John.Durban@noaa.gov

Week of 20 May 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – Last week's calf count was 24, about 1/2 of last week's count, so the bulk of the cow-calf migration seems to have passed north of our survey site. The total for the season is now 303 calves, bringing the 2013 count above the average of calf production for the 20 year time series. Contact Wayne Perryman for more information or see http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464.

Press:

Gray whale spotted off Namibia is first to be documented in Southern Hemisphere **Wayne Perryman/Aimee Lang**

http://www.petethomasoutdoors.com/2013/05/gray-whale-spotted-off-namibia-is-first-to-be-documented-in-southern-hemisphere.html

MMTD research featured in NMFS' Podcast Rollout - On 16 May, the Fisheries Office of Communications launched "**On the Line**", a collection of podcasts that use NPR-style interviews, photo galleries, and web stories to communicate the work of our scientists. The launch features MMTD's passive acoustics research on fin whales: To Protect Fin Whales, Scientists Work on Their Listening Skills. Links:

- http://www.nmfs.noaa.gov/podcasts/2013/05/listening_to_fin_whales.html
- SWFSC's multi-media site: http://swfsc.noaa.gov/multimedia
- SWFSC podcasts on itunes: https://itunes.apple.com/podcast/noaa-southwest-fisheries-science/id250831169?mt=2

Week of 13 May 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – A total of 58 cow/calf pairs were recorded last week, bringing this season's total to 279, slightly lower than the total last year on this date. On Wednesday, the team watched a group of an estimated 9 killer whales attacking a group of 10 humpback whales. The interaction lasted several hours with the killer whales appearing to attempt to isolate a smaller humpback from the group. The attack appeared to be unsuccessful (well from the perspective of the killer whales). This was also the highest calf count day for the week: 24 pairs. See

http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464 and contact Wayne Perryman for more information.

Sarasota Bay Dolphin Health Assessment Sampling, Sarasota Bay, FL, 6-10 May - Last week Nick Kellar joined a capture/release team designed to assess health of bottlenose dolphins, as part of a larger assessment related to the Deep Water Horizon event. The team worked up 16 animals and 45 perfectly shaped blubber biopsies were obtained from the 15 NRDA animals (three different time points for each animal), with starting and ending samples coupled with blood samples for hormone measurement comparisons. Contact Nick for additional information.

Press:

Photographer Captures Stunning Killer Whale Attack on Dolphin **(Robert Pitman)**
http://www.wired.com/wiredscience/2013/05/killer-whale-flips-dolphin/

Week of 6 May 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – Last week's total calf count was 92, up from 82 the previous week. This brings the total count for the season to 221, 40 fewer than last year at this time, but about average for this date throughout the 20 year time series. See http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464 and contact Wayne Perryman for more information.

Bahamas Odontocete Tagging, April/May 2013 - The latest in a series of collaborative field efforts to deploy satellite tags on cetaceans on and around the US Navy's Atlantic Undersea Test and Evaluation Center (AUTEC) in the northern Bahamas has just been completed. This ongoing project specifically aims to monitor the movements and diving behavior of cetaceans in relation to Navy exercises involving the use of active sonar. This is a collaboration between the Marine Mammal and Turtle Division of Southwest Fisheries Science Center (SWFSC), the Bahamas Marine Mammal Research Organization (BMMRO) and the US Naval Undersea Warfare Center (NUWC), with funding from the US Navy's Living Marine Resources (LMR) program. This season, tags were deployed on melon-headed whales (n=2), rough-toothed dolphins (n=1) and sperm whales (n=2). These small LIMPET tags are expected to transmit location and dive data over the coming weeks, which will be related to activities on the AUTEC range and estimated sonar levels. Contact John Durban for more information.

San Diego Coastal Bottlenose Dolphin Research – As part of a joint SWFSC/SIO collaborative research program on coastal bottlenose dolphins, Dave Weller and Greg Campbell (SIO) conducted a small boat survey off San Diego on 30 April. Four groups totaling 41 dolphins were encountered and more than 800 digital photo-identification images were taken. In addition, one group of 60 common dolphins and five gray whale mother-calf pairs were observed.

Awards, grants and recognition:

MMTD's Acoustics Program receives research funding - Jay Barlow and Shannon Rankin have received $60K from NMFS' Ocean Acoustics Program for their project "Mapping Ocean Noise and Cetacean Density in the Santa Cruz Basin: A Meso-scale Operational Test of a Pelagic Buoy-based Recording System". Congratulations Jay and Shannon!

Other of note:

MMTD science features prominently on NMFS homepage – A NMFS homepage news story in March highlighted Wayne Perryman's research with colleagues on how NOAA scientists use aerial drones to spy - for research of

course - on sperm whales. That was the third most popular news feature of the month, with 863 views. Nice job Wayne!

Week of 30 April 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – The team had good weather last week, losing only 3.4 hrs of effort to weather. Eighty-two cow-calf pairs were recorded, putting the total number for this season slightly lower than last year at this date. Of note, Thursday (25 April) was the largest single-day calf count since 1998 (32). See http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464 and contact Wayne Perryman for more information.

Press:

Sea Lions Struggle On San Diego Coast **(Mark Lowry/Jeff Laake)**
http://www.kpbs.org/news/2013/apr/19/sea-lions-struggle-san-diego-coast/

Photographer Captures Dramatic Battle Between Orcas and Sperm Whales **(Robert Pitman)**
http://origin.www.wired.com/wiredscience/2013/04/orca-v-sperm-whale/

Awards, grants and recognition:

MMTD doctorate student receives NSF Award - In December, Eric Keen was awarded first place in a National Science Foundation competition for the best short video, as part of the 60th anniversary of its Graduate Research Fellowship Program. Eric's first-place, 90-second video is titled "Whales in Fjords". Congratulations Eric!
To view an NSF interview with Eric Keen:
http://www.livescience.com/26735-marine-biology-grad-student-eric-keen-nsf-sl.html
To view his video:
http://www.livescience.com/26800-grad-student-makes-film-about-his-whale-research-video.html

Other of note:

MMTD's ESP becomes SHARP - The Ecosystem Studies Program has a new name. The program will now be called the Marine Mammal Spatial Habitat and Risk Program. The new name reflects changes in the research priorities of the program that have occurred over the last several years. The mission of the program is to investigate effects of habitat variability and human activities on marine mammal populations to support conservation and management. The primary focuses of the program are habitat and spatially explicit risk assessment. Habitat research includes quantifying spatial and temporal variability in oceanographic conditions and other components of the ecosystem, predicting species distributions, and identifying critical habitat. Spatially explicit risk assessment includes both individual and cumulative impacts from human activities such as shipping and fishing.

Week of 22 April 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – Two afternoons were lost to high winds last week but 39 cow/calf pairs were counted. The number of adults and juveniles dropped to 22. Contact Wayne Perryman for more information or see http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464.

Pinniped Ecological Research, Channel Islands - Mark Lowry and Libby Ahlers collected California sea lion scat samples for diet studies from San Nicolas Island, 16-18 April and Mark and Kate Achilles will census California sea lions and northern elephant seals, and collect California sea lion scat samples for diet studies at San Clemente Island, 26-29 April. Contact Mark for more information.

Week of 16 April 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – Last week brought high winds, rain, and fog, at the cost of a couple of days of effort. Gray whales continue to stream past the survey location; recorded were 24 adults, 16 juveniles, and 9 cow/calf pairs (bringing the total calf count to 10 for this season). Contact Wayne Perryman for more information or see http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464.

Week of 8 April 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – Last week, the second week of the 2013 survey, saw the first northbound cow-calf pair of the season, in addition to 143 adult gray whales, 51 juveniles and 10 hours of fog.
See http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464 and contact Wayne Perryman for more information.

Green Turtle Ecological Research, San Diego Bay, 9 April - This is the first capture day since the South Bay Power Plant was imploded on 2 Feb 2013. It marks the beginning of a new capture regime in San Diego Bay for which the team's efforts will occur largely during warm-water months. With the power plant offline, capture success during the traditional winter season had been extremely low due to green turtle inactivity. For more information on the project contact PIs Tomo Eguchi or Robin LeRoux.

Week of 1 April 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June – The first week of the survey was conducted last week in good weather conditions and adult and juvenile gray whales migrating northward. No cow/calf pairs were observed but this is not a surprise, as the season is early still. See http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464 and contact Wayne Perryman for more information.

San Diego Coastal Bottlenose Dolphin Research, 27 March – As part of a joint SWFSC/SIO collaborative research program on coastal bottlenose dolphins, Dave Weller and Greg Campbell (SIO) conducted a small boat survey off San Diego on 27 March. Five groups, totaling about 50 dolphins, were observed and more than 1000 digital photo-identification images taken. In addition, two groups of northbound gray whales and two groups of common dolphins were encountered. Please contact Dave for more information.

Marine Turtle Nesting Beach and Bycatch Monitoring, Sierra Leone & Liberia, West Africa, 27 March-8 April – Ongoing. Contact Manjula Tiwari for more information.

Press:

Blue whales at higher risk from ship strikes **(Jessica Redfern)**
http://www.ocregister.com/news/whales-501227-study-blue.html

Researchers seek further shipping lane changes to protect whales **(Jessica Redfern/**Monica DeAngelis**)**
http://www.dailybreeze.com/news/ci_22876312/researchers-seek-shipping-lane-changes-protect-whales

Antarctic blue whales tracked in Southern Ocean (**Jay Barlow**)
http://media.theage.com.au/national/selections/blue-whales-tracked-in-australian-first-4143795.html

Week of 25 March 2013

Field work:

Gray Whale Calf Production Survey, Piedras Blancas Light Station, Central California, 25 March – 1 June - Today begins the 20th consecutive year of a shore-based survey of northbound gray whales designed to estimate calf production. This time series has been valuable for monitoring the recovery of the once Endangered North Pacific Gray Whale population, understanding population dynamics of a recovered baleen whale, and linking reproductive output with short-term fluctuations of seasonal ice in the Arctic. This effort is funded by the International Whaling Commission. Contact Wayne Perryman for more information or visit the following website: http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16464

Marine Turtle Nesting Beach and Bycatch Monitoring, Sierra Leone & Liberia, West Africa, 27 March-8 April - Manjula Tiwari is traveling to Sierra Leone to evaluate an ongoing nesting beach monitoring project, conduct beach surveys, and review bycatch data collection from artisanal fisheries. This project is in collaboration with colleagues at the Reptile and Amphibian Program of Sierra Leone. In Liberia, she will meet with colleagues at Save my Future (SAMFU), Sea Turtle Watch Program, and Conservation International and evaluate the effectiveness of nesting beach and bycatch monitoring programs carried out in collaboration with the coastal communities.

Press:

Researchers deploy drones to spy on sperm whales (Wayne Perryman)
http://www.petethomasoutdoors.com/2013/03/researchers-deploy-drones-to-spy-on-sperm-whales.html

Leatherback turtle nest numbers way down (Peter Dutton)
http://www.sfgate.com/science/article/Leatherback-turtle-nest-numbers-way-down-4362377.php#ixzz2NzxnVYNd

Week of 18 March 2013

Field work:

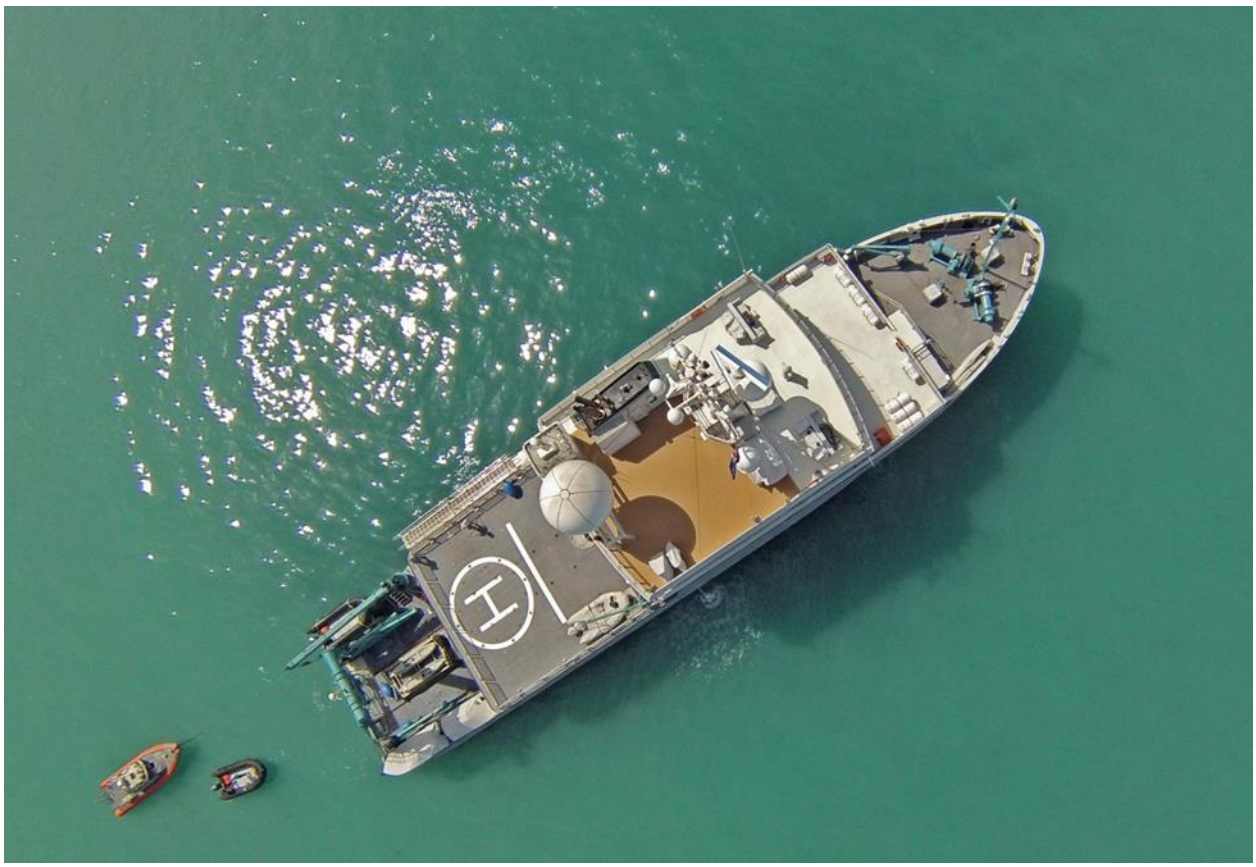
Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States (MMTD scientists Jay Barlow and Paula Olson) have been conducting research on blue whales in the Southern Ocean using visual observations, passive acoustics, and satellite tagging. The project is sponsored by the Australian Government and part of the IWC-SORP Program. The project concluded late last week. For more information, see http://www.marinemammals.gov.au/sorp/expeditions/antarctic-blue-whale-voyage-2013 and Blue Whales @SORPnews

Pacific Orcinus Distribution Surveys (PODS), California Current, 27 February – 20 March – Ongoing. The goal of the PODS research project, led by the NWFSC and conducted aboard the SHIMADA, is to study the winter/spring distribution and behavior of southern resident killer whales in 'outer coastal' waters off Washington, Oregon and California. Tina Yack is the senior acoustician.

Week of 25 March 2013

Field work:

Unmanned Aerial System Sampling of Large Whales, Kaikoura, New Zealand, 17 February – 10 March –The project has successfully concluded. Accomplishments include successful launch and retrieval of UASs from large and small boats, and high resolution photographs (see below) that allow for quantification of body size and shape of cetaceans (sperm whale photographs collected). A NMFS homepage news story this week provides an overview of the project, as does the project website: http://www.spermwhalesnz.blogspot.com/ Contact Wayne Perryman for more information.



Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States (PRD scientists Jay Barlow and Paula Olson) are conducting research on blue whales in the Southern Ocean using visual observations, passive acoustics, and satellite tagging. The project is sponsored by the Australian Government and part of the IWC-SORP Program. Follow the cruise at http://www.marinemammals.gov.au/sorp/expeditions/antarctic-blue-whale-voyage-2013 and Blue Whales @SORPnews

Pacific Orcinus Distribution Surveys (PODS), California Current, 27 February – 20 March – Ongoing. The goal of the PODS research project, led by the NWFSC and conducted aboard the SHIMADA, is to study the

winter/spring distribution and behavior of southern resident killer whales in 'outer coastal' waters off Washington, Oregon and California. Tina Yack is the senior acoustician.

Press:

Scientists Use Aerial Drones to Study Sperm Whales Up Close – **Wayne Perryman**
See http://www.nmfs.noaa.gov/

Awards, grants and recognition:

Funding received for health assessment research using hormone assays – Work continues to ascertain the effects the Deepwater Horizon oil spill has had on populations of cetaceans in the northern Gulf of Mexico. Nick Kellar has received $50K to help in additional sampling as part of live capture health assessments of bay, sound, and estuarine bottlenose dolphin populations exposed to varying levels of oiling. The resulting samples will be analyzed in part to assess potential residual endocrine effects associated with chronic oil exposure. Congratulations Nick!

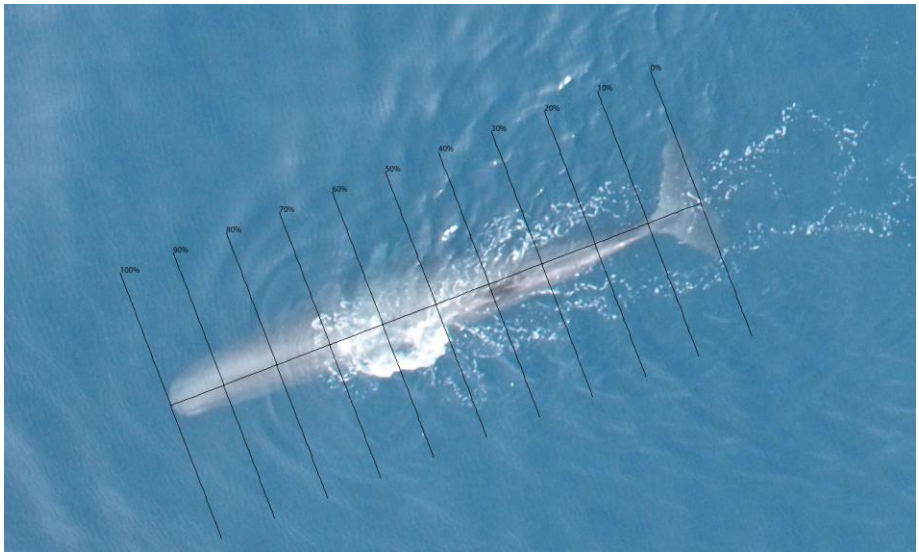
Other of note:

PRD becomes MMTD – In an effort to provide greater clarity, within the agency, and to our external constituents and partners, with respect to what we do, the division has received approval to change our name. We are now "The Marine Mammal and Turtle Division". The website will be changing soon.

Week of 4 March 2013

Field work:

Unmanned Aerial System Sampling of Large Whales, Kaikoura, New Zealand, 17 February – 10 March –Testing and sampling continues to go well. The UAS team (Wayne Perryman and Don LeRoi) has now successfully launched, retrieved, and sampled with the quad- and hexacopter from the research vessel and small boats. A variety of camera systems have been placed on the UAS platforms, including a "Go Pro" camera. Results are impressive (see photo below). See http://www.spermwhalesnz.blogspot.com/ and contact Wayne Perryman for more information.



Retrieval of Passive Acoustic Moorings, Central California Coast, 26 Feb - Karin Forney, Daniel Palacios, Jim Harvey (Moss Landing Marine Laboratories, MLML) and divers Scott Gabara and Mike Fox (MLML) successfully retrieved the remaining passive acoustic moorings that were deployed off San Luis Obispo County in support of the Diablo Canyon Seismic Survey Cetacean Monitoring program. This completes SWFSC field efforts for this project to monitor harbor porpoises and other cetaceans. In total, porpoise echolocation-click detectors (CPODs) were deployed at five separate locations for 2-3 months, providing novel data on variability in porpoise occurrence patterns in this area. Contact Karin Forney for more information.

Northern Elephant Seal Survey, Channel Islands, Southern California Bight, 4-8 March - Mark Lowry will conduct a fourth and final aerial photographic survey at San Miguel Island, Santa Rosa Island, and San Nicolas Island this week. This survey will census pups produced during the 2013 pupping-breeding season and adult females. These surveys are made with a P-68 Partenavia Observer aircraft chartered from Aspen Helicopters. It is a high-wing, twin-engine aircraft with a glass nose which provides the pilot with excellent forward and downward viewing capability which is needed for flying over beaches occupied by elephant seals. A Canon EOS-1Ds Mark III, 20 megapixel digital camera is mounted inside the belly of the aircraft for taking vertical photographs of beaches occupied by elephant seals. The camera is connected to a laptop computer, a GPS receiver, and a radar altimeter for recording geographical position and altitude of each photograph. Contact Mark Lowry for additional information.

Antarctic Killer Whale Ecological Research, Antarctic Peninsula and McMurdo Sound – Field research has been successfully concluded and Robert Pitman and John Durban are now back home in San Diego. Final tally for the season:

- 3 tags on Type A killer whales (2 depth recording, 1 location only)
- 7 tags on Type C killer whales (4 depth recording, 3 location only)
- 6 tags on Type B killer whales (including both small and large form Type B; 3 depth recording, 3 location only)
- 6 tags on Antarctic minke whales (3 depth recording, 3 location-only)

All but two tags continue to transmit as the Antarctic winter sets in. Also collected were photographic images of killer whales from the Antarctic Peninsula and McMurdo Sound field sites - these will be a large contribution to our dataset for mark-recapture estimates of abundance. Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale-TrackMap/. Contact Robert Pitman or John Durban for more information.

Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States (PRD scientists Jay Barlow and Paula Olson) are conducting research on blue whales in the Southern Ocean using visual observations, passive acoustics, and satellite tagging. The project is sponsored by the Australian Government and part of the IWC-

SORP Program. Follow the cruise at http://www.marinemammals.gov.au/sorp/expeditions/antarctic-blue-whale-voyage-2013 and Blue Whales @SORPnews

Pacific Orcinus Distribution Surveys (PODS), California Current, 27 February – 20 March – Ongoing. The goal of the PODS research project, led by the NWFSC and conducted aboard the SHIMADA, is to study the winter/spring distribution and behavior of southern resident killer whales in 'outer coastal' waters off Washington, Oregon and California. Tina Yack is the senior acoustician.

Press:

Decline in leatherback turtles reported
http://www.upi.com/Science_News/2013/02/27/Decline-in-leatherback-turtles-reported/UPI-21921362005507/
(**Peter Dutton**)

http://www.kpbs.org/news/2013/mar/01/pacific-leatherback-sea-turtle-headed-extinction-w/ (**Scott Benson**)

Week of 25 February 2013

Field work:

Unmanned Aerial System Sampling of Large Whales, Kaikoura, New Zealand, 17 February – 10 March – Wayne Perryman has been invited by the University of Otago and Woods Hole Oceanographic Institution to participate in a research cruise designed to investigate health and physiological questions about sperm whales. The SWFSC's role will be to evaluate the use of a small UAS aboard a research vessel as a tool for sampling cetaceans at sea. The hexacopter, designed and built by Don LeRoi (also part of the project) and affectionately named "Fat Albert," is water tight and was originally designed for sampling blows of whales. To date, a series of test flights from land and sea have been conducted and the team is now working to adapt Fat Albert for small boat work. See http://www.spermwhalesnz.blogspot.com/ and contact Wayne Perryman for more information. *Photos Below: Wayne and Don with Fat Albert; Fat Albert in flight; photo from Fat Albert of sperm whale and researchers aboard a small boat.*



Retrieval of Passive Acoustic Moorings, 26 Feb - Karin Forney, Daniel Palacios, Jim Harvey (Moss Landing Marine Laboratories, MLML) and divers Scott Gabbara and Mike Fox (MLML) will retrieve the remaining passive acoustic moorings that were deployed off San Luis Obispo County in support of the Diablo Canyon Seismic Survey Cetacean Monitoring program on Tuesday, pending conducive weather and other logistical issues. The seismic survey was canceled in November, but the passive acoustic instruments already in the water were left in place for the expected 3-month battery life of the instruments, so they could collect baseline data on harbor porpoise occurrence patterns in this area. Contact Karin Forney for more information.

Antarctic Killer Whale Ecological Research, Antarctic Peninsula and McMurdo Sound – Field research has been successfully concluded and Robert Pitman and John Durban are now headed north across the Drake Passage aboard the research vessel PT. SUR. The location and depth satellite tags on Antarctic killer whales (Types A,

large and small B, and C) and minke whales continue to transmit. Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale-TrackMap/ Contact Robert Pitman or John Durban for more information.

Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States (PRD scientists Jay Barlow and Paula Olson) are conducting research on blue whales in the Southern Ocean using visual observations, passive acoustics, and satellite tagging. The project is sponsored by the Australian Government and part of the IWC-SORP Program. Follow the cruise at http://www.marinemammals.gov.au/sorp/expeditions/antarctic-blue-whale-voyage-2013 and Blue Whales @SORPnews

Pacific Orcinus Distribution Surveys (PODS), California Current, 27 February – 20 March - The goal of the PODS research project is to study the winter/spring distribution and behavior of southern resident killer whales in 'outer coastal' waters off Washington, Oregon and California. This vessel-based survey is currently conducted from the NOAA research vessel SHIMADA. Tina Yack will be the senior acoustician.

Week of 18 February 2013

Field work:

Antarctic Killer Whale Ecological Research, Antarctic Peninsula and McMurdo Sound – A total of twenty-two animals have now been tagged (location-only, and dive depth tags) as part of this research effort. These include seven Type C/Ross Sea killer whales and 3 minke whales from McMurdo Sound, and nine killer whales (Types A, large B, and small B) and three minke whales from the Antarctic Peninsula region. A more detailed account of results to date is provided below in "Research Findings". Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale-TrackMap/. Contact Robert Pitman or John Durban for more information.

Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States (PRD scientists Jay Barlow and Paula Olson) are conducting research on blue whales in the Southern Ocean using visual observations, passive acoustics, and satellite tagging. The project is sponsored by the Australian Government and part of the IWC-SORP Program. Follow the cruise at http://www.marinemammals.gov.au/sorp/expeditions/antarctic-blue-whale-voyage-2013 and Blue Whales @SORPnews.

Week of 11 February 2013

Field work:

Antarctic Killer Whale Ecological Research, Antarctic Peninsula – This past week, John Durban and Bob Pitman have been on board the R/V Point Sur (research vessel from Moss Landing Marine Lab), working with the US Antarctic Program. They are continuing their killer whales studies off the west side of the Antarctic Peninsula. Also on board are a team from Duke University (Ari Friedlaender, Andy Read, Doug Nowacek) studying the fine scale foraging behavior of humpback whales, and Nick Gales from the Australian Antarctic Division, who is deploying satellite tags to study the longer term migration behavior of minke and humpback whales. The killer whale work continues to be very productive: a large aggregation of Type B (small form) killer whales has been tracked over the past week: three satellite LIMPET tags have been deployed, facilitating follow-up studies to collect photo-identifications, photogrammetry images, biopsy samples and acoustic recordings over several encounters. Notably, a depth-recording LIMPET tag was deployed on an adult male Type B killer whale, so we currently have dive-depth data being transmitted from active tags on both adult males and females of each Antarctic killer whale types A, B and C. These data will fill key data gaps on foraging behavior, and further the comparison of habits and prey specialization between types. Another satellite LIMPET tag was deployed on an

Antarctic minke whale (now 5 for the season). These tags are providing the first data on fine-scale movement and diving behavior for this species, and will allow an evaluation of the performance of small LIMPET tags alongside the implant satellite tags being deployed by Nick Gales during this project. Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale-TrackMap/ Contact Robert Pitman or John Durban for more information.

Photo above: An adult male Antarctic Type B killer whale (small form), swims in front of the Research Vessel Point Sur. The killer whale has a thick coating of diatoms giving a yellow coloration to the skin. This diatom accumulation indicates a lack of turnover of the epidermis, and we hypothesize that these whales will soon need to travel to warmer waters (a "maintenance migration") to allow skin regeneration without the high cost of heat loss to frigid waters.

Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States (PRD scientists Jay Barlow and Paula Olson) are conducting research on blue whales in the Southern Ocean using visual observations, passive acoustics, and satellite tagging. The project is sponsored by the Australian Government and part of the IWC-SORP Program. Follow the cruise at Blue Whales @SORPnews

Pinniped Abundance Surveys - Mark Lowry will conduct an aerial photographic survey of northern elephant seals at all Channel Islands in southern California and along the central California coast from Point Conception to Point Reyes during 12-17 February 2013. This survey will census maximum number of pups produced during the 2013 pupping-breeding season, and adult females. Thus far this year two aerial photographic surveys of elephant seals have been conducted at San Nicolas Island, San Miguel Island, and Santa Rosa Island (the three largest rookeries in the U.S.) as part of four surveys to estimate total number of adult females present at these rookeries during the pupping-breeding season. The estimated total number of adult females from four surveys (the next is planned for 3-5 March) will yield an estimate of total number of births and an estimate of pre-census mortality prior to the 12-17 February survey. Contact Mark for more information.

Photo above: Northern elephant seals photographed at Santa Rosa Island from an altitude of 800 feet during an aerial photographic survey, 30 January, 2013

Photographic assessment of body shape changes in killer whales, with application to monitoring body condition of endangered southern residents - This is a collaborative project between PRD/SWFSC (John Durban and Holly Fearnbach) and Sea World San Diego (Hendrik Nollens and Alan Garver) to conduct photographic monitoring to assess body changes over time in individual killer whales housed at Sea World San Diego. The aim is to further develop photogrammetric tools that can be used to monitor the body condition and nutritional status of wild populations of killer whales. Vertical overhead photographs will be collected each month over an annual period to provide repeat longitudinal measures of individual whales to identify measurement sites along the body axis that display variable widths within individuals over time, and between individuals of varying status. The results from this study will be integrated with a database of longitudinal photographs of free-ranging killer whales from both the North Pacific and Antarctica in order to identify sensitive measurement sites for photogrammetric assessment of body shape changes for this species. Most notably, this project will develop the tools necessary to monitor the nutritional status of the endangered "southern resident" population of killer whales that are thought to be food-limited in some years. Photographic images were collected by Holly Fearnbach on February 5th and 7th and sampling will continue for the next twelve months. Contact John Durban or Holly Fearnbach for more information.

Press:

San Diego Bay Green Turtle Research **(Jeff Seminoff)**
http://www.utsandiego.com/news/2013/feb/03/green-sea-turtle-power-plant-endangered-species/

Week of 4 February 2013

Field work:

Antarctic Killer Whale Ecological Research, Antarctic Peninsula – Another very productive week off the west side of the Antarctic Peninsula: four groups of killer whales sighted, including Type A and the smaller form of Type B. Type A's are a large form with striking black and white pigmentation that we have observed feeding on minke whales and elephant seals. However, we have spent relatively little time with this type, and we took the opportunity this week to deploy three tags on Type A whales, including two depth-recording satellite transmitter tags and one location-only transmitter tag for longer term tracking. This is proving to be a remarkable season: to date we have deployed tags on each of the three killer whale types found in Antarctica (Type A, *n=3;* Type B, *n=2*; Type C, *n*=7), and data from these tags will provide a valuable comparison of the movement, diving

behavior and habitat use of these types. We also deployed another location-only tag on an Antarctic minke whale this week, our fourth of the season, to investigate fine scale movements (e.g. anti-predation strategies, habitat use) and longer term migration behavior. This coming week we transfer to the *R/V Point Sur* for a month of focused killer whale studies. We are extremely grateful to Lindblad Expeditions, the National Geographic Society and the staff and crew of the National Geographic Explorer for hosting us over the past month: this has been our third season aboard the ship, and they keep getting better! Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale-TrackMap/ Contact Robert Pitman or John Durban for more information.

Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States will depart from Nelson, New Zealand on 30 January to study blue whales in the Southern Ocean. Visual observations, passive acoustics, and satellite tagging will be used. PRD scientists Jay Barlow and Paula Olson are part of the team. The project is sponsored by the Australian Government and part of the IWC-SORP Program. Follow the cruise at Blue Whales @SORPnews

Press:

Cryptic beaked whales declining **(Jeffrey Moore and Jay Barlow)**
http://www.utsandiego.com/news/2013/jan/29/beaked-whale-marine-mammal-Navy-sonar/

Awards, grants and recognition:

PRD Receives NOAA Bronze Medals! – Congratulations to Kerri Danil, Peter Dutton, Scott Benson, and Jeremy Rusin! – And many congratulations to our colleague, Senior Scientist Bill Perrin, who was awarded a Distinguished Career Award!

Other of note:

First record of hawksbill turtle along the US west coast! - SeaWorld personnel responded to a hawksbill sea turtle stranding in San Diego Bay on 29 January. The turtle was transferred to SWFSC by Robin LeRoux on 31 January. Not only is this the first ever species other than green turtles to be found in the Bay, it is the FIRST-EVER hawksbill turtle to be recorded along the U.S. West Coast. The hawksbill measured 95.5 cm CCL and weighed 64.4 kg. She was found just South of the Coronado Bridge by the 3rd hole of the golf course.

Week of 28 January 2013

Field work:

Gray Whale Condition Research, Southern California Bight - This effort is focused on estimating reproductive and nutritive condition of southbound gray whales based on measurements of length and width taken from vertical aerial photographs from a NOAA Twin Otter. Three hours of flight time remain and, weather pending, one more flight this week should bring the project to a successful close. Contact Wayne Perryman for more information.

Antarctic Killer Whale Ecological Research, Antarctic Peninsula – Killer whale surveys continued to be productive onboard the National Geographic Explorer over the past week: four groups of killer whales were sighted, with 30+ individual whales documented in identification photographs. Remarkably, all these whales could be matched to our existing collaborative database (40,000 photographs, 100+ contributors) including one group that we have photographed in January during each of the past five field seasons. These data on site fidelity and re-sighting rates will be invaluable for producing spatially-explicit abundance estimates. Holly Fearnbach leaves the ship and is replaced by Bob Pitman this week; Bob and John Durban will be hosted by Lindblad Expeditions for one further trip onboard the National Geographic Explorer before transferring to the R/V Point Sur for another NSF-sponsored project that includes focused killer whale research in February. Tag update: Nine of the ten satellite tags deployed by John and Bob at the fast ice edge in McMurdo Sound earlier this season (now including 6 type C killer whales and 3 Antarctic minke whales) continue to work very well. Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale.
Contact Robert Pitman or John Durban for more information.

Southern Ocean Research Partnership (SORP) – Antarctic Blue Whale Cruise, Southern Ocean - Scientists from Australia, Chile, New Zealand, the United Kingdom and the United States will depart from Nelson, New Zealand on 30 January to study blue whales in the Southern Ocean. Visual observations, passive acoustics, and satellite tagging will be used. PRD scientists Jay Barlow and Paula Olson are part of the team. The project is sponsored by the Australian Government and part of the IWC-SORP Program. Follow the cruise at Blue Whales @SORPnews

San Diego Coastal Bottlenose Dolphin Research – As part of a joint SWFSC/SIO collaborative research program on coastal bottlenose dolphins, Dave Weller and Greg Campbell (SIO) conducted a small boat survey off San Diego on 23 January. One group of 22 dolphins was encountered and more than 200 digital photo-identification images collected. In addition, one group of 200-300 common dolphins and three groups of grays whales, including one northbound juvenile, were encountered. Contact Dave Weller for more information.

Other of Note:

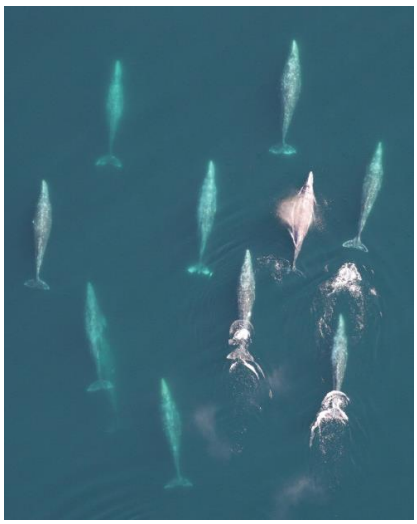
Advanced Technology Trials Successful - Dave Weller and Wayne Perryman travelled to Granite Canyon last week to participate in a side by side test of two thermal sensor systems. This test is part of a Phase II SBIR grant to Toyon Corporation for the design and installation of a thermal sensor based system for counting southbound

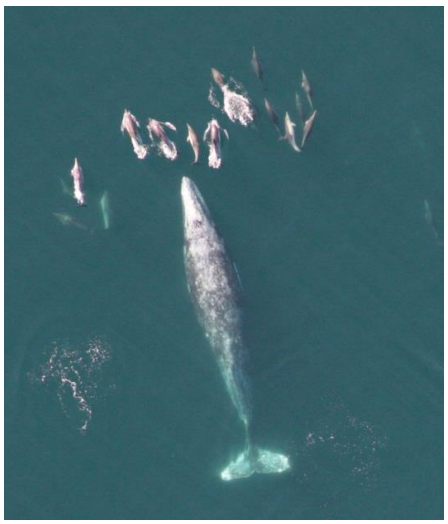
gray whales from this unique site. The goal is to reduce costs of shore based surveys of these whales and to allow us to increase the frequency and extend the duration of these surveys.

Week of 22 January 2013

Field work:

Gray Whale Condition Research, Southern California Bight - This effort is focused on estimating reproductive and nutritive condition of southbound gray whales based on measurements of length and width taken from vertical aerial photographs from a NOAA Twin Otter. After losing 5 consecutive days to bad weather, a high pressure system moved in and the team flew 6 days last week (Tuesday-Saturday). Conditions for photography were near perfect. The migration peak has passed; only a few cow/calf pairs are still offshore of the Southern California Bight and pregnant females are rare. Thanks to efforts of our flight crew to cut costs by staying at North Island Naval Air Station and taking advantage of low fuel costs on the base, we have managed to save enough money to add 5 additional hours to our flight budget, bringing us to a total of 50 hrs, of which 12 remain. LTJG David Cowan and Ens Mike Hirsch deserve special thanks; both are excellent pilots and have contributed significantly to the success of this effort. Contact Wayne Perryman for more information. *Photos: a large group of migrating gray whales; dolphins bow ride a migrating gray whale; a female with a young calf migrates south.*





Pinniped Abundance and Ecological Research, Channel Islands, Southern California Bight - Mark Lowry and Stephanie Nehasil will collect California Sea Lion scat samples from San Nicolas Island, 22-24 January, to be used for diet studies. Contact Mark for more information.

Antarctic Killer Whale Ecological Research, McMurdo Station, Ross Sea, and Antarctic Peninsula – Antarctic Peninsula: Durban and Fearnbach's time onboard the National Geographic Explorer has continued to be successful into the second week. We deployed another satellite LIMPET tag on a Type B (small form) killer whale in the Gerlache Strait; this is a location-only transmitter tag, intended to enable longer term tracking into the winter months and high resolution tracking in the shorter term to facilitate relocation for follow up studies. We have observed these whales to feed on brushtail penguins at the surface (see photo), but the previously-deployed LIMPET tag continues to transmit astounding dive-depth data, dives regularly greater than 500m and even in excess of 700m on occasions. Our work in the coming weeks will focus on identifying the prey they are targeting at these depths. After returning to Ushuaia (Tiera del Fuego, Argentina) to change out the guests onboard, we are now southbound again in the South Shetland Islands. We expect more killer whales in the coming days. McMurdo Station, Ross Sea: Pitman returned to San Diego last Thursday from 1 month in the field. Nine of the ten satellite tags deployed at the fast ice edge by John Durban and him (now including 6 type C killer whales and 3 Antarctic minke whales) continue to work very well, with dive and location data coming in for both species. Of note, the killer whales are diving to over 700 m; minkes in the same area are regularly diving to only 80 m. Further information, including real time tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale.
Contact Robert Pitman or John Durban for more information.

Press:

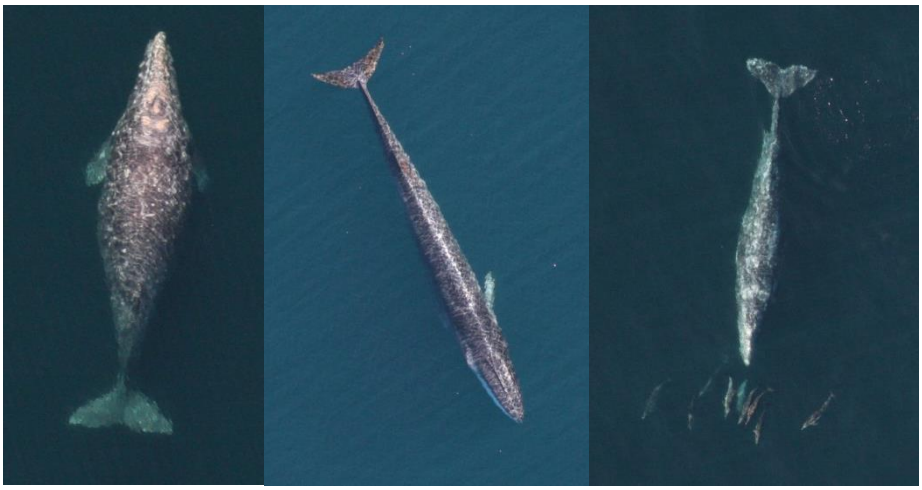
Beaked whale declines paper featured in SCIENCENOW online (Jeffrey E. Moore/Jay P. Barlow)
http://news.sciencemag.org/sciencenow/2013/01/scienceshot-the-mystery-of-the-b.html?ref=hp
Research paper: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0052770

Week of 14 January 2013

Field work:

Gray Whale Condition Research, Southern California Bight - This effort is focused on estimating reproductive and nutritive condition of southbound gray whales based on measurements of length and width taken from vertical aerial photographs from a NOAA Twin Otter. Two flights were conducted this past week and about a dozen gray whales including several very wide, likely pregnant, females and 3 cow/calf pairs, were photographed. Also encountered were large groups of common dolphins and Risso's dolphins. Weather limited operations somewhat and a very large swell prevented calibration of the radar altimeter. About 35 hrs of flight time remain.

Contact Wayne Perryman for more information. *Photos Below: A very pregnant female gray whale; a sleek fin whale; common dolphins bow ride in front of a gray whale.*



Pinniped Abundance and Ecological Research, Channel Islands, Southern California Bight - Mark Lowry conducted a northern elephant seal aerial photographic survey at San Miguel Island and Santa Rosa Island on 9 January. San Nicolas Island could not be surveyed the following day due to high winds that would make it too dangerous to fly the survey; the survey will occur later this month. Mark and Corey Sheredy will census California sea lions and northern elephant seals, and collect sea lion scat samples for diet studies at San Clemente Island this week (15-17 January).

Antarctic Killer Whale Ecological Research, McMurdo Station, Ross Sea, and Antarctic Peninsula – Robert Pitman finished up a month at McMurdo Station over the weekend working with colleagues as part of a NSF-funded project on apex predators. Identification photographs and 10 satellite tags deployed (9 still transmitting) will allow estimation of killer whale population size, and quantification of foraging behavior (dive depths and movements) of both killer whales and Antarctic minke whales. In addition, approximately 3 hrs of acoustic recordings of the distinctive Ross Sea Killer Whale were obtained for comparative analyses, and 10 biopsy samples collected to study trophic interactions between minkes and killer whales. John Durban has transferred from McMurdo to the Antarctic Peninsula where he and Holly Fearnbach will continue studies evaluating the ecosystem interactions of killer whales as top predators. John, Holly and (later) Bob are being hosted by Lindblad Expeditions onboard the expedition ship *National Geographic Explore*r until early February, when operations will transfer to the National Science Foundation charter vessel R/V *Point Sur*. Already, during the first full day off the Antarctic Peninsula, the team deployed a depth-recording satellite tag on a Type B killer whale (small form). These tags will be used to remotely monitor movement and diving behaviors over the coming weeks, to infer possible prey species and predation strategies; later work aboard the *Pt. Sur* will focus on prey mapping/sampling in important foraging areas identified from the tag data. Further information, including online tag tracking can be found at http://swfsc.noaa.gov/PRD-KillerWhale Contact Robert Pitman or John Durban for more information.

Photos Below: Collecting acoustic data from Ross Sea Killer Whales; Pitman deploys a satellite tag on an Antarctic minke whale; a depth-recording satellite transmitter tag being deployed on the dorsal fin of a Type B killer whale off the western side of the Antarctic Peninsula. The tag was projected on the end of a crossbow bolt; the bolt fell away on contact with the whale (as shown), leaving the small tag attached.

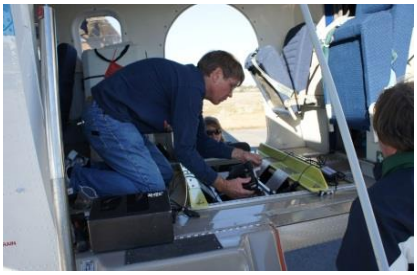
Press:

Aerial photos give perspective on gray whales (**Wayne Perryman**)
http://www.utsandiego.com/news/2013/jan/10/tp-aerial-photos-give-perspective-on-gray-whales/

Week of 7 January 2013

Field work:

Gray Whale Condition Research, Southern California Bight - The NOAA Twin Otter NOAA RF57 arrived in San Diego on Thursday (3 January) to begin photogrammetric sampling on southbound gray whales. This effort is focused on estimating reproductive and nutritive condition based on measurements of length and width taken from vertical aerial photographs. The research is funded by the IWC and is part of a long term study designed to investigate the impacts of weather and climate on eastern north Pacific gray whales. This year's effort is particularly important due to the anomalous ice conditions in the Arctic last spring, when ice extent was the most expansive in the 30 year time series, and last summer, when ice cover was at an all-time low. Photographic sampling will be conducted from San Diego over the next 30 days. Contact Wayne Perryman for more information. *Photos: The NOAA Otter with a new paint job, Morgan Lynn installs an image motion compensated camera system, and a vertical photograph of a pregnant gray whale.*


Green Turtle Ecological Research, San Diego Bay - On 9 January 2013, the SWFSC green turtle research team will continue green turtle capture efforts in San Diego Bay. Contact Robin LeRoux or Jeff Seminoff for more information.

Pinniped Abundance and Ecological Research, Channel Islands, Southern California Bight - Mark Lowry will conduct a northern elephant seal aerial photographic survey at San Nicolas Island, San Miguel Island, and Santa Rosa Island 9-11 January. This is the first of four planned surveys during the 2013 winter breeding season which will be used to estimate total number of adult females, from which number of births and total pup mortality will be estimated. The US Navy will provide a chartered aircraft for three of the surveys, with the fourth survey being funded from FY12 carryover funds that have been obligated through Department of Interior.

Antarctic Killer Whale Ecological Research, McMurdo Station, Ross Sea – Robert Pitman and John Durban are currently at McMurdo Station, Antarctica, as part of an NSF-funded project titled: "Benthic pelagic coupling in an intact ecosystem: The role of top predators in McMurdo Sound". Since their arrival (15 December 2012), they have deployed 4 dive depth/location and 3 location-only tags (see photographs) on Ross Sea Killer Whales (RSKW, also known as "Type C" killer whales), a fish-eating ecotype that occurs commonly in McMurdo Sound, and 1 depth/location tag and 2 location-only tags on Antarctic minke whales. All 10 tags are working well and indicate that the killer whales are foraging mainly along the fast ice edge, diving for 10-15 minutes at a time, to depths of 300-400 m, which takes them to the bottom in shallower waters. This vertical foraging with repeated bounce dives over hours at a time is more similar to beaked whales than to the horizontal ranging of most forms of killer whales. The physiological and morphological adaptations that underpin this highly divergent lifestyle further suggest that RSKW is in fact a separate species of killer whale. In addition, there have been questions about whether this fish-eater depends mainly on large, relatively rare toothfish or much more abundant but much smaller other species of icefish that occur in the Sound – observations this season suggest that killer whales are capable of feeding on very small fish, as the photograph here shows. Contact Robert Pitman for more information.


Press:

'Citizen scientists' explain mysterious die-offs, trace oil spills back to surprising culprits (Scott Benson, Karin Forney)
http://www.mercurynews.com/science/ci_22307439/citizen-scientists-explain-mysterious-die-offs-trace-oil